

US EPA ARCHIVE DOCUMENT

# Getting it Funded: Finding Funding for your Clean Energy Programs (Part 2 of 3: EPA Funding Webcast Series)

Webcast Transcript

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## Webcast Agenda and Meeting Logistics

### Slide 1: Title Slide

Ladies and gentlemen, thank you for standing by and welcome to the second Webcast of the U.S. EPA Webcast series on Funding and Financial for Local Government Clean Energy Program. All lines have been placed on mute to prevent any background noise. If you should need assistance during the call, please press star then zero, and an operator will come back on the line to assist you. Thank you. I would now like to turn the call over to – the conference to Neelam Patel, climate and policy specialist at the U.S. Environmental Protection Agency. You may begin your conference.

Neelam Patel: Thank you. I'd like to welcome all the participants on behalf of the U.S. EPA Local Climate and Energy Program. My name is Neelam Patel. And I'll be talking you through today's Webcast, which is part two of a three-part series that talks about funding options for local governments.

### Slide 2: Webcast Agenda

During today's presentation, today's Webcast, we will discuss various sources of funding for clean energy programs – and clean energy is energy efficiency and renewable energy. So, in today's post-American Recovery and Reinvestment Act world where there is less federal funding than there has been the past few years, we will be identifying funding options to help you continue the momentum gained from your existing energy, renewable energy and climate mitigation programs.

On the screen in front of you, you'll see the agenda. Today's Webcast, part two of the series is a quick overview of funding options. Our final Webcast, which will be in two weeks, will actually cover different financing options that you may want to invest in.

So, for today's Webcast, I'll give you a quick welcome and a little bit of information about the overall series. Pat McGuckin from the Cadmus Group will provide you the 101 on different funding options. He will be followed by Marvin Lee from the School District of Philadelphia. And he will – he actually is a financial analyst. And he'll talk about his – how he's saved money for the School District on energy cost to benefits the overall school system.

Marvin will be followed by Nate Boyd from the City of Orlando. And Nate will talk through a number of successful funding approaches. Once we hear from both Marvin and Nate, Pat will actually spend a few minutes talking through how to pull together the two examples from Philadelphia and Orlando in a way that can work for you in your community.

Lastly, we'll have a question-and-answer session. And you can submit questions throughout the entire Webcast. We encourage you to do that. And, lastly, there is an optional exit survey which is about eight questions. And the information that we gather through this survey is very

important to helping us meet your participant needs. So, please, if you can, take the time to go through those.

I'm going to turn it over to Lauren Pederson from ICF, who will go through some of the GoTo meeting logistics.

#### Slide 3: GoTo Webinar Software Logistics

Lauren Pederson: Thank you.

And just a few logistics before we get started – you're going to be muted throughout the Webcast in order to minimize background noise. And you'll be able to submit questions and comments in writing. And I'll show you on the next slide how you can do that.

The PDF and audio files of today's session will be made available in a couple of weeks at the following link. If you have any technical difficulties, please contact me via e-mail at ([lpederson@icfi.com](mailto:lpederson@icfi.com)).

#### Slide 4: Questions (GoTo Meeting)

This screenshot shows you how to submit a question. So if you have a question, submit it through the "question" pane. We're going to compile these questions and ask them during the question-and-answer session. If you could please include the name of the presenter in your question, that would be helpful so we know who to direct your question to. You just enter it in this box here and then click "send" and we'll receive the question. Back to you, Neelam.

#### Slide 5: Optional Feedback (GoTo Meeting)

Neelam Patel: Thanks. And, again, I mentioned the optional exit survey, most of these questions are multiple choice, two to three are open-ended. And the questions may look similar, but they help us figure out at what stage you are in your process. So please take the time to answer those because what we will do with those answers, it not only will help us with directing our presentations to you today, but it will also help us, the U.S. EPA Local Climate and Energy Program, meet your needs.

#### Slide 6: U.S. EPA Local Climate and Energy Program: Goals

And, primarily, what we do is we help communities reduce greenhouse gas emissions with – and starting up with energy efficiency and renewable energy. And we do this in a number of ways, which you can see on the slide. And we also emphasize multiple benefits. This is very important, but I'm going to go ahead and allow you to look at the slide while we transition into today's main topic, which is funding.

#### Slide 7: Local Climate and Energy Programmatic Elements

As you'll see on this slide, there are a number of different program elements. Today, we have this funding Webcast, and then another one, part three.

The other resource that I'd like to mention to you is 50 communities who are doing on-the-ground programs are – their profiles are available through our Web site. And we call these communities "climate showcase" communities. So please check those out.

So, as I was saying, trying to move to the funding question that we are here to talk about, we have a poll question here for you today. And the goal of this poll question is to understand why you've joined this call today. This helps us better meet your needs like I mentioned before. And I just want to confirm that everyone sees the question on the screen.

## Poll Question #1

Slide 8: Poll Question

Lauren Pederson: Yes, the question is up.

Neelam Patel: Great. You can take a minute to answer that. So, with this question, we'll get a sense of why you're on the call. So, Lauren, if you could please read out the results?

Lauren Pederson: Great. So, in response to this poll question, 85 percent are learning about types of funding options; 35 percent are interested in information to inform/motivate others; 51 percent are interested in designing potential funding programs for their communities; 42 percent are interested in adopting some or all of the funding options; and 4 percent replied other.

Slide 9: Funding Webcast Series

Neelam Patel: OK, great. So we know we have an audience that's primed and ready to go. So, with that, on the Webcast today, I do want to mention that this is part of a series, so we are talking a holistic approach to providing you information. The first Webcast was really about the intersection of planning and funding, which I'll provide a brief recap of. And then, today, you'll hear about – we're here to learn about the sources of funding. And in two weeks, like I said, we'll have financing options.

Slide 10: Webcast 1: Recap - How Does Funding Fit Into the Planning Process?

So, here, you have the full – the different – the full planning process. And you can see places which are the places where you – thinking about funding can be extremely helpful. And you can also see that the funding question is very related to a number of different steps in this process. For example, your funding strategy relates to your program design, relates to the identification of and selection of different options that you decide to invest in.

Slide 11: Recap: What Resources Are Available for Your Program?

So the next topics that we covered during the first Webcast are what are the resources or the stakeholders that can help build your programs. So, here, you see in the bubbles a number of different support sources, from political leadership to expertise on the nonprofits, the private sector, and even your own internal management. So, for more information on these, the slides from our first Webcast will be available online in just a few weeks.

Slide 12: Recap: What Do You Want to Fund?

## Poll Question #2

What I'd to do now is transition to our next presenter, Pat McGuckin. And we'll start off Pat's presentation with another poll question about challenges. So, as we get this question up on the screen, I'll go ahead and read it to you. What challenges have you faced in trying to obtain a funding source? And please select any of the responses that you see on the screen.

OK, thank you for taking the time to answer those questions – excuse me – this question. And the challenges that we see, the greatest challenges, lack of expertise and experience and available funding. And, actually, that was very nicely in – as we introduce Pat's presentation, because he will actually be providing an overview of the different types of available funding and talk about how to apply those.

And some of the other choices – for example, the lack of political support – these are things that we talked about in our first Webcast. So I do encourage you to go to those files once they're available online.

So, Pat, you have a primed audience ready for the one-on-one that you'll be providing.

Slide 13: Contact information

# Finding Funding For Your Climate and Clean Energy Programs

## Slide 1: Title Slide

Pat McGuckin: Thank you, Neelam, and hello, everyone. Neelam, I feel like I've got a warm-up speaker with that introduction.

## Slide 2: Finding Funding for Your Programs

Let's dive right in. Here's a quick overview of what we'll be talking about. We'll very briefly go through key funding characteristics and then get into the meat of today's presentation, talking about a dozen different funding options, including tips on how to use each one. We'll close with additional funding tips that are more generic, that apply to multiple options, and provide four pages of resource links that might be useful to you as well.

## Slide 3: Key Funding Characteristics

In terms of the key funding characteristics, there are three concepts that may be useful. Seed funding – well, let's just go ahead and dive right in – seed funding versus sustainable.

## Slide 4: Seed Funding versus Sustainable

Seed funding is typically one time, typically thought of as being suitable for short-term programs, but it can also be used for a long-term program. Particularly if the seed funding is large enough, it can support an ongoing self-funding program like a revolving loan fund as opposed to sustainable funding, which would typically be long-term, committed over multiple years.

It could be a self-funding program such as energy savings generated by an energy efficiency program, or a renewable energy program that creates energy, or it could be sustainable funding that could take the form of a long-term budget commitment – solid waste fees, for example, have been used as a sustainable source of funding, utility public benefit fees, et cetera. We'll be talking about each one of these options here in just a minute.

## Slide 5: Funding To Spend versus To Repay

The next subject is spending versus having to repay the money. To spend money would be, for example, a grant or budget allocation. The important thing to note is that if you want to implement a program that does not generate revenue or saving, then you're going to have to have a source of money that you don't have to repay as opposed to money that does have to be repaid such as a loan or a lease. If you've got a source of revenue or savings then that can be feasible.

## Slide 6: Categories of Funding



This may seem like it's very obvious and very elementary, but you'll be surprised, at least I have been surprised at how often when we get into the heat of battle, trying to figure out how to fund a program. Ideas pop-up and they sound good and then when the question gets asked, "Well, wait a second. How are we going to repay that source of funding?" It's back to the drawing board.

It can be useful to categorize funding into these four classes here; self-funding programs, they typically generate revenue or savings that revenue can take the form of fees or taxes, for example, or energy savings are most common.

Financing may be an option with these programs, if they are generated because they are generating revenue or savings. Good example is energy efficiency and renewable. By internal funding, we mean funding that is under the control of your government entity, so it could be a budget allocation, something along those lines.

External funding then is self-explanatory, except that we make a distinction between external funding and external financing. We'll be talking about external financing in the next Web cast.

Slide 7: What Are Your Funding Options?

Let's get in to the meat of the presentation. What are the different funding options that are worth considering? You see here, that we're broken down – in the left-hand side, the funding options, you'll see the four different categories; self-funding programs, internal funding, and so forth.

Then across the top, you've got seed versus sustainable funds. And funds to spend and to repay and then just a brief description of what some of the additional characteristics are for each of these 12 sources of funding.

Let's go ahead and dive into each one specifically. Oh, my gosh. I just hit the wrong button and it's going to take a few minutes to get that back up. I wonder if I could ask the moderator to pull up the Webcast and advance the slides for me.

Neelam Patel: Yes, I'll do that. OK. Now.

Pat McGuckin: We're on slide number 8.

Neelam Patel: And go ahead, you can start off by talking about the first option, while we set up on the slides.

Pat McGuckin: Sure. That's a great idea. I can't believe I just hit the wrong button. Operator error. I'm sorry folks.

Slide 8: Funding Options (continued): Behavioral and Operational Energy Savings

The first funding option – behavioral and operational energy savings, this is a low-cost opportunity to make a real impact, if you focus on public buildings, then the energy savings from

those behavioral changes can be used to build a fund for other projects, such as energy efficiency upgrades.

You're going to be hearing more about that approach later in this Webcast with case history from the Philadelphia School District. One of the key questions here is how to generate – how to allocate the savings among the competing interests.

Normally, the energy savings – if you do a project that reduces the energy cost of a building, then that reduced cost means it's a budget savings for that department or your community's overall operating fund. But if you want to use the savings to create a revolving loan fund, then at least some of the savings need to be diverted into a revolving loan fund account. These behavioral and operational energy savings are ideal for schools, we're seeing it used there a lot, students can get involved. And there can be a number of benefits. But it's also something that's feasible for a local government buildings as well.

#### Slide 9: Funding Options (continued): Energy Efficiency and Renewable Energy Upgrades

The second funding option is energy efficiency and renewable energy upgrades. And Neelam, if you could tell me, when we get to the screen – get – we're on page nine now, if you can tell me when we get there, that would be wonderful.

Neelam Patel: Pat you can now say next slide, I'll move to the next slide.

Pat McGuckin: OK. We're – and I'll do that. Number nine.

Neelam Patel: Yes.

Pat McGuckin: Second option is energy efficiency and renewable energy upgrades, these are improvements that involve a higher upfront cost. But because these upgrades result in energy cost savings, they can be financed and repaid from the energy savings. If you focus on improvements to public buildings, then the savings and perhaps also the rebates and tax incentives can be used to build a growing fund for more projects. There are two really interesting questions involved here. First of all, do you use all of the savings or just enough to make the payments?

For instance, let's say that the upgrades will save you \$10,000 a month on your energy bills. You can stretch the loans so that the payments equal \$10,000 a month. Or you can lengthen the term of the loan, so that the payments are just \$7,000 per month, leaving you with \$3,000 of extra savings.

The question – the second question then becomes how do divide that extra \$3,000 per month. It might go to the general fund to reduce the budget deficit, for example, or it could be used to grow the revolving loan fund very quickly, or it could be used in part to help motivate the department that is making the upgrades to be involved with the program.

In private – in private buildings, the savings, generally, cannot be used to grow the fund. The savings are used to pay off the financing, but the problem is that the owners keep any excess savings, typically. So you can, however, use fees or sponsorships to help fund program administration. You might charge a small interest rate on a revolving loan fund, for example, the help cover administration.

And that's not to say that a revolving loan fund for private sector, energy efficiency programs isn't a feasible way to go. If you have a lot of seed money, you can lend it out and then use the payments to keep the program alive and keep making loans. It's just that the revolving loan fund won't grow in that situation. Next slide, please.

#### Slide 10: Funding Options (continued): Energy Savings Performance Contracting (ESPC)

Performance contracting is a subset of energy efficiency funding. The reason we break it out separately is that, typically, the ESCO or Energy Services Company can arrange for financing. And if you're struggling to find funding that can be a huge advantage. You may find that the financing that the ESCO brings to the table is not as attractive or inexpensive as financing that you can perhaps arrange yourself, for example, tax exempt lease purchase agreements maybe less expensive.

We also hear mixed reviews on performance contractors. Some communities have – hadn't worked very well. Others are not real fans of performance contracting. And I think experience has taught that the key there is to make sure that there is somebody on your side of the table who really understands performance contracting and is going to be watching out for your interest.

That expert assistance and the staff cost to manage a performance contracting program can be self-funded, and there is a link there to a great report that talks about self-funded programs that have been done in Washington, Kansas, and Pennsylvania. Those are all state programs that – but there's no reason why that same approach can't be used for a community.

Next slide, please.

#### Slide 11: Funding Options (continued): Power Purchase Agreements (PPAs)

Power purchase agreements also a subset, in this case, of renewable energy funding. And again, we break it out separately for the same reason that the system developer usually is the one who funds the program. And again, it's helpful to have an expert on your side of the table.

And again, that expert assistance and staff cost can be self-funded. You'll hear in Webcast three, for example, how Sacramento, California implemented a very creative approach to having that cost folded into the PPA agreement. Again, we'll talk more about performance contracting and power purchase agreement in Webcast three. Next slide, please.

#### Slide 12: Funding Options (continued): Fees and Sponsorships

Fees and sponsorships can be a significant source of revenue. The question to ask is who benefits from your program. Participants, obviously, benefit. And there can – you can charge them fees for services or for loan origination or whatever is appropriate for your type of program.

Contractors who participate in the program can be charged a participation fee, either in general or for each program or for each project that they get, retailers and so forth. And then with regards to sponsorships, the question is who might want to be associated with your program. Utilities, certainly, might be a possible sponsor. Businesses, we heard in Webcast one, how Arlington, Virginia got a \$100,000 contribution from a business that had a vested interest in the program. In Webcast three, we'll hear about how Little Rock, Arkansas is bringing employers in, and then community organizations, local, environmental, clean energy organizations and so forth. Next slide, please.

#### Slide 13: Funding Options (continued): Budget Allocations

Budget allocations typically come from the general fund or the capital improvement budget. They could be a one-time allocation, seed funding, or they could be an on going commitment. If the allocation is used for an energy efficiency or renewable energy program, then the savings or revenue could be used to fund more upgrades and you could end up having a revolving loan fund.

One of the problems with budget allocations is that they can be susceptible to changes in leadership and/or budget crisis. One way to try to address this can be to create a public private partnership, or a third party administrator and to transfer the funds to them, that makes them more difficult to pull the funds backward to renege on a commitment. Next slide, please.

#### Slide 14: Funding Options (continued): Internal Loans and Revolving Loan Funds (RLFs)

Internal loans and revolving loan funds, funding can come from budget allocations. We're including it here as an internal source, even though it can also come from external grants and other sources. But now that ARRA is wrapping up, the internal funding like allocations – budget allocations are more likely to be the most likely source of funding for an internal revolving loan fund.

Also, funding can come from department reserves or treasury investment accounts. These are money that is held by departments or the treasurer for investment. They're reserve accounts, for example, and we're seeing the bullet underneath the Sustainable Endowment Institute is – got a great paper there.

You see the link that talks about how there are a lot of universities – over 40 universities around the country have persuaded their endowments to invest in energy efficiency improvements to the university. And it's a great win-win, endowment gets a secure and attractive return. And the university ends up with more comfortable buildings.

One of the challenges here is to try to balance the interest rate and to make it lower to help drive demand versus a higher rate that can help pay for program administration cost. Next slide, please.

#### Slide 15: Funding Options (continued): Public Benefit Fee or Tax

We're going to have to hurry up through these to get through all 12. Public benefit fee is the charge on utility bills, paid by all rate payers or an entire class to support programs that offer public benefit. A tax, on the other hand, would typically be charged on sales and the revenue from that dedicated to a particular program.

One of the challenges or problems with PBFs and taxes is that they need to be validated in an election; that requires political support from the top. Finances or campaigns to pass a ballot like that are not inexpensive. And particularly today in the current economic plan, it may not be – may or may not be a realistic option for you.

The other possibility is that if your state has a Public Benefit Fund, you can explore the possibility of tapping that fund. Usually, those funds are already committed, but it could be worth trying to track that down. Next slide please.

#### Slide 16: Funding Options (continued): Utility Rebates and Incentives

Utility rebates and incentives, I think everybody is probably familiar with those. Let me encourage you as we kind of go quickly through the rest of these that if you have questions, please just enter them in the chat box and we'll answer them at the end. Next slide.

#### Slide 17: Funding Options (continued): Grants and Contributions

Grants and contributions. Typically for one-time programs or seed capital, for a long-term self funding program recognize that businesses with the best of interest may be willing to make contributions. As part of your stakeholder engagement during the planning process, you may reach out to a business that turns out they have a willingness to make the contribution to your program.

It might be helpful to know that private foundations are moving away from giving grants and toward mission-related investments which are low-interest long-term loans. It's important to realize what grantors are looking for, sustainable programs and so forth. So bear that in mind as you're approaching them. Next slide please, number 11.

#### Slide 18: Funding Options (continued): Tax Incentives

Tax incentives. Very quickly, there are two that are definitely worth making sure that you're familiar with, the 179D tax deduction for commercial buildings. That's up to a \$1.80 per square foot. That's a deduction. And there is a way for public entities to benefit from that tax deduction as well even though public entities don't pay taxes. Check out the link there and you'll be able to see more about that.

There's a renewable energy tax credit. And then at the state level, they'll look for tax incentives. There's the DSIRE database that can be very helpful, not only in terms of tax incentives and credits and so forth, but also in terms of other programs, utility programs and that sort of thing.

Slide 19: Funding Options (continued): Emission Fees, Petroleum Violation Funds, etc.

Emission fees, petroleum violation funds, those are possibilities. I won't say that they are likelihoods. You can check out each of those links to find out more. Next slide please.

Slide 20: Funding Options (continued): External Financing

And then the final category of external financing, we'll be covering that in the next Webcast. Program financing models we'll be talking about include PACE, HUD PowerSaver, On-Bill Repayment and so forth. Topics will include working with Community Development Financial Institutions, CDFIs, PowerSaver and what finance models are best for your circumstances.

Slide 21: Additional Funding Tips

We've got two pages of additional funding tips. These are more general as opposed to the option-specific tips that we've gone through on the preceding pages. And, again, since we're running out of time, I would just encourage you to ask questions about these during the Webcast. And then you can always e-mail me with any follow-up questions if you like. Let's go to the next page.

Slide 22: Additional Funding Tips (continued)

We've got – that's the second page of the funding tips. And let's go to the next page, number 23.

Slide 23: More Information on Funding

We've got four pages here of links to additional information on funding. The first page here gives you links to ENERGY STAR tools.

Slide 24: More Information on Funding (continued)

And then the next three pages, if you'll click through those, you'll see other resources from EPA.

Slide 25: More Information on Funding (continued)

On page 25, you'll see some resources from DOE.

Slide 26: More Information on Funding (continued)

And on page 26, you'll see some from various organizations that are very actively involved in energy efficiency funding.

Slide 27: Contact Information

Then on the final page, 27, you've got my contact information. And please feel free to shoot me an e-mail if you have any specific questions that you think I might be able to help you at.

With that, I'll turn it back over to Neelam.



## Poll Question #3

#

Neelam Patel: Great. Thank you, Pat.

And thank you everyone in the audience for dealing with our technical issues. Definitely, as Pat encouraged, please ask questions. So, for example, if you have questions about risk related to any of the options that Pat covered or strategies on how to work with particular options, for example, working with utilities, please do submit those questions. And hopefully, the table that Pat started off with is a good resource for getting a sense of the different types of options available.

Next, we have Marvin from – Marvin Lee from the Philadelphia School District. And before Marvin gets started, we do have a poll question for you. It's about demand response program. So I'll let you read that for a moment.

And as you're responding to the question and selecting just one answer here, Marvin was particularly interested in learning about how much of the audience has participated or, you know, where you're at with demand response programs which is something that he's going to address in his presentation. And his presentation will primarily talk about how to collect internal seed money.

So on the screen you see the response from the question. And we see the highest response for demand – to demand response program is "Have not considered it." So you will hear from Marvin a very intriguing case study on how to save money related to your energy budget. And we'll hear about the way he did a demand response – he is running a demand response program.

So with that, I'd like to turn it over to Marvin.



## Cost Savings in Utilities for Dummies

### Slide 1: Title Slide

Marvin Lee: Thank you very much, Neelam. My name is Marvin Lee, and I'm the director for the financial operations of Philadelphia School District. I hope you're not offended by the title of the presentation, but I thought it was a really proper title because I'll be talking about fuel cost saving initiatives that an average person like me can accomplish.

I did not have any energy experience – energy management experience. I'm not an engineer, but my department was able to save \$10 million or 15 percent of the total expenditures investing less than \$400,000 in a single year. If you have no go-to guy for your organization and if you have no energy manager, you have no background in energy management, but you see you can save money. This is like probably the perfect 15-minute presentation you'll see.

### Slide 2: Background

Yes, a little bit of a background before I get to the detail and how I got myself into the energy management. Philadelphia School District is the eighth largest school district in the nation with 250 schools and 150,000 students. And just like any other urban school district, we have been facing huge budget deficits since two years ago. Just to give you an idea, our school district operating budget went from \$3.2 billion to \$2.7 billion in the last two years. That's \$500 million budget cut in two years.

My department management either has to lay off employees or find other ways to save money. That was basically how we got into the energy management business. And it was really easy to get support from employees as they understood every \$60,000 savings, we save an employee.

### Slide 3: Our View of Energy Management

One more slide before I get into detail. The first concept I craft when I first got into the energy management was there are two sides of energy management, two ways to save money in energy management, one is the price side, the other demand side.

Supply side management is basically about get a group price and pay what you only used. And demand side management is obviously about you use less by doing what are the three things that I listed. You can optimize your systems, for example, HVAC system, or you can invest money, capital money to get more cost efficient units or you can also work with your end users to change their behaviors.

With the budget crisis that we faced, we also had our limitations. We had no money. We needed something really quick payback, really something that almost guaranteed savings. So our approach to the program was that we were going to approach the low-hanging fruit first and also if you don't want any risk but also guarantee savings. We primarily focus on very little human

intervention in the beginning because whenever you have human factor in there, I mean, the result may vary.

So we didn't have any money. So there's got to be no or little cost or the payback must be three years or less. So I'll be presenting three initiatives that we did last fiscal year. They are demand response program, energy procurement program, and utilities billing audit program.

#### Slide 4: Demand Response Program

OK. Demand response program was the most exciting energy management program deal we participated last year. This program provides financial incentives for helping you local utility manage its supply and demand of the electricity in case of the system-wide emergencies. Think of a really hot day that everyone is wanting their ACs. And electricity demand suddenly only spikes, but there's a finite supply with electricity. In order to avoid a blackout, utility either has to increase generation or decrease consumption.

Demand response program is designed to help your local utility cover emergencies. You should sign up. Your utility company will ask you to reduce consumption to the level you promised, in return your local utility will pay you money.

If you look at the bottom line – bottom of the slide, that's how much we expected – we received money from the utilities. We basically got \$40,000 last year per megawatt. And we're expecting \$51,000 per megawatt this year. We're expected \$90,000 per megawatt next year.

So actual savings was pretty – actual revenue, I would say, was pretty significant, too – \$520,000, \$750,000, \$1.1 million expected next year. So the beauty of the program is that you don't – you receive payments even if – just by promising to reduce. It doesn't – that may not even happen.

If you look at the middle of the slide, you get to see the historical frequency of the events. Last year there was one event. The year before there was one event. Year before there was no event. But we stood up – I mean, the people still got paid for that year. And also one more thing is that there's no penalty for non-performance either. So it's really great to – great program to participate.

If you want to participate, the first step is to have a contact via the CSP. This is like a middleman kind of company. They will help you set up your baseline which is basically last year's peak load contribution (PLC). And they will help you nominate the load. They're usually recommending 50 percent of the last year's peak contribution rate.

It's really easy to understand conceptually because basically you have to reduce electricity when there's an emergency to make money. Procurement of the CSP is easy but you have to be very careful, because you want to consider some vendors that have real time visibility of the performance. And also, you'd like to select a company that's financially strong because we noticed that many small companies go belly up. And you also want to look for the companies that charge you – don't charge you anything for non-performance either.

And delivery of the execution can be really varied based on your system. So if your building doesn't have any – I mean, we have some building management systems but fairly limited. So we had to rely on our employees to, you know, reduce the demand. So it was kind of – it was pretty challenging to perform. But if you had a building management system in your school or your entity, it's going to be a lot easier for you to manage. OK.

#### Slide 5: Demand Response Program

The demand response, that's actually the actual performance at one of the high schools that we have, so you could see our baseline was about 850 kilowatt and our contribution rate was 317 kilowatts and we were actually exceeding the, I mean, the performance. We were doing about 468.

So just from this school only, we were receiving about \$13,000. We calculate that based on 317 kilowatt and you just have to multiply – you have to multiply that by the \$40,000 that's how you get your money. OK. OK.

#### Slide 6: Demand Response Program

So, you want to definitely make sure that you want to find out whether your local utility company offers that program. And you usually have to split the revenue with your CSP. And if you have a building measurement system, it's really easier for you to control the participating demand response program.

And although we did it manually last year, our compliance rating was 87 percent which is pretty good rate so I was pretty happy with the result. And I also have to check – actual check that we've received. We just received \$154,000 actual check for the last quarter. So you get the quarterly checks so it's pretty – it's really good, you know, having those checks.

One thing that you have to note is that unfortunately it's probably too late to participate this summer because the they're going to start their program in June 1, so in two days they're going to start the program. But you can plan for them next fiscal year, next year.

Usually they gear up usually around December and January and it's really great to participate next year because if you saw the per megawatt price. You'll be getting paid \$90,000 per megawatt and this year we are getting paid only \$50,000. So you'll be getting a lot more money for next year.

#### Slide 7: Energy Procurement

Energy procurement program, Philadelphia schools generate the most savings in energy procurement. You can buy electricity and gas in open market depending on your state regulations. In Pennsylvania, electricity market was deregulated in January 2010 and we started participating in February 2010.

Basically if you are deregulated in this yellow portion, it's basically regulated by your local utilities. There's no chance you can change that. But you can buy your own generations and you can have some ways of managing it in these other components.

For natural gas, you can buy your own commodities and also you can buy your own transportation. I mean, very limited – I mean, in transportation, very limited negotiation but you can still – you can still negotiate the transportation piece.

And there are three ways – there are three major ways to participate that basically fixed for your budget (certainty) block, and index is basically you can block maybe, for example, 50 percent over your electricity and leave it (floor-based) on the market.

And you can also – you can also purchase your electricity or gas based on the actual market. And there are three or more procurement methods. You can use your conventional RFP. You can do something simpler way which I do because of pricing or there are companies that can help you with the reverse auction, too.

OK. So, the level of difficulties conceptually is it could be difficult to understand in the beginning but if you keep hearing about energy procurement – I mean, energy procurement, you will eventually get it. And the degree of difficulties of procurement is pretty difficult I would say because you have to coordinate the effort with the procurement department and also the legal department and also the supplier. They don't hold your price so long so you probably have to make the decision almost on the same date. So – but also, you have to have some kind of flexibility to react to the market, too. I mean, you don't want to lock in anything when the price is temporarily spiked.

Execution can be very difficult because it's a – it's a market just like a stock market, energy price varies every minute. So, it could be – it could be difficult. Financial investment needed, obviously if you could do it by yourself obviously you're not going to incur any cost. That's what we did. And extra savings were first. We saved our electricity cost by 21 percent or \$6 million.

#### Slide 8: Energy Procurement – Deregulation by States

OK. This is actually the map of deregulation. You can actually check your state to see whether you can buy your own electricity or gas. For example, Pennsylvania, that's yellow. That means I can buy electricity and natural gas. I will give you 10 seconds to review.

OK. If you're in a state that is deregulated or you haven't purchased electricity or natural gas, this is really a perfect time to get into the electricity market and natural gas market because the pricing is actually very attractive right now. And your procurement process must be very flexible enough to react the – in the energy market. And there are so many consulting companies that can help you this purchasing. So the help is out there, too.

#### Slide 9: Energy Procurement

And on the right side, I am showing you actually the electricity procurement performance basically comparing calendar year '10 and calendar year '11. You get to see monthly savings that we had. That's really significant savings.

And also, I compared the total consumption level. I mean, the total consumption went down by about 4 percent in fiscal year – I mean, calendar '11 but the savings was 21 percent. So it was definitely the energy procurement that worked. OK.

#### Slide 10: Utilities Billing Audit

Utility billing audit – billing audit is something that everyone should be doing right now because utility companies usually do a good job with their billing, but sometimes they make mistakes because tariff is very complicated even to them. And the meter may not work properly and they even make simple calculation errors.

For example, we found one utility company that has been charging us exactly 10 times of the meter value. And we got – we found that and we got a huge return. And I don't think that it was intentional but it happens. Yes.

It's very easy to understand conceptually you basically have to audit your bills and procurement can be difficult because there are so many small companies that you want to – you want to get the right one. But getting the right one can be very difficult. Degree of difficulty is execution, all you have to do is basically keep the vendor honest and having them do a good job so it's not too difficult. You don't have to do really anything.

And in the middle, you get to see how much we actually saved in the first 18 month that we started. In natural gas, we found five counts of mistakes (then we) generated almost \$1 million, electricity eight counts, \$650,000, water one mistake, \$180,000. So whenever you find mistakes, mistakes are usually big so I really encourage you to participate in the utility billing audit.

And financial investment needed, you – the companies usually charge up to 50 percent of the savings. So – but you can definitely negotiate that down. And the estimated savings first year, you usually get the more savings in the first year because they review the current year bills and also usually last two years.

But – and for the first year, you can expect 0.3 percent or 0.5 percent every year. So, actual savings that we had was the \$1.8 million in first 18 months. And also, I only wanted to show you actually the check that we received from the local utilities.

#### Slide 11: Utilities Billing Audit

This is from only one elementary school and they've been making mistakes constantly for so many – so long time. So we got \$640,000 check from utility in last September. And also if you do the billing audit with the companies, you also get added value – added value because they help you with the tariff optimization, and also you can get the cost and consumption analysis by account for free. They usually do that for free.

And shared savings is the best way to approach this contract because, yes, and they usually charge 50 percent of the amount they discover. They usually charge you for four months forward saving – anticipating savings as well. And shared savings, I mean, the rating is definitely negotiable.

#### Slide 12: Other Cost Saving Initiatives in FY11

And other cost saving initiatives that we did last year or last fiscal year was that we have so many oil burning schools that we converted nine schools into, you know, natural gas. That's because the natural gas is so much cheaper heating source.

So – and the project was also financed by the local gas company because obviously, they wanted us to burn more gas. And the return on investment is really three years and we paid them back through the natural gas bills. So we're going to have the first two years but right after that we're going to be saving \$520,000. We expect to save that much every year.

And the storm water credits Philadelphia water department charges stormwater charges based on the impervious area. If you prove that certain areas are not impervious they give your money back, and we invested \$25,000 for survey and found \$180,000 worth of credit. That's recurring credit so that's going to be going on until – but they usually go on for four years. They have to renew the process.

And last we in-sourced energy management last year which saved about \$623,000. Yes.

#### Slide 13: How to Get Energy Management Initiatives Started

How to get into – how to start the energy management initiative, you just got to talk to a lot of people, that's my best advice. I mean, they usually have a lot of ideas how to save, so definitely talk to your local utilities and they usually have ideas. And talk to marketing department and also energy management consulting companies. They're in the business of educating you because you have to be educated to make the decision.

I mean you have to be educated to purchase their services so they'll be willing to spend a lot of time with you to educate you in energy management, definitely talk to a lot of them. And also go to seminars and conventions, you'll find a lot of useful information from those places. And I'm running out of time, so I'll be wrapping up.

Buy in from management is really crucial too, and you can do that by showing them samples and also you can also – if you haven't done the energy purchase, then you can also ask one of the suppliers to give you a quote and you can obviously show the management the saving opportunities.

And definitely talk to your peers, I'm always available, you can always e-mail me or call me. And I would love to talk to you about energy savings and how I mean I can help you.



Slide 14: Thank you slide

OK, thank you for your time.

Neelam Patel: OK, great. Thank you, Marvin.

It may seem surprising that there was so much opportunity for reducing energy cost in the School District of Philadelphia. But actually through our program, we've heard of other cities and school districts having the same opportunities of mischarges and et cetera.

So up to this point, Pat has given us an overview of options and then we had Marvin provide us with some information on how to look at energy budgets for a large school system. And Marvin provided us the specific strategies to generate seed funds that could be used to create ongoing funding program such as revolving energy funds.

## Poll Question #4

Neelam Patel: Out next speaker, Nate Boyd, Energy Product Manager in the Office of Business and Financial Services in the City of Orlando. We'll be checking upon revolving energy funds. So if you could please take a moment to answer the question, which is a sneak preview as to what Nate will be talking about.

OK, if we could see the responses, please?

Great. So how many of you have considered revolving energy fund? So our highest percentage is "have considered it", and "I'm interested but not participating", with 40 percent. And then there's a few folks, 30 percent of the audience have not considered revolving energy funds.

While we appreciate everyone's answers, we would – we are excited to – I'm excited to turn it over to Nate, who's going to talk about what the City of Orlando did to set up a number of funding streams. But hopefully he'll be able to provide information to, you know, the majority of those of you on the phone and help out those of you that already have programs, get a different perspective. Nate?



## Getting It Funded: Finding Funding for Your Clean Energy Programs

Nate Boyd: All right, thank you.

All right. Now, I can't really see the screen anymore because they go to a Webinar and kind of went away on these, so I'm just going to run through this. You can see my screen just fine, right?

Neelam Patel: Yes, we can.

Slide 1: Title Slide

Nate Boyd: OK, good. All right. Good afternoon, everyone. Thank you for your time. I'm going to spend a couple of minutes and go over the case study of the City of Orlando's Internal Energy Policies.

Now, in the interest of time, I'm going to go through this pretty quickly. So if you have any questions, please feel free to send them our way and we'll try to get them answered. Go ahead and use the chat box to do that.

All right. So, today, we'll specifically address the structure of our revolving energy fund. The roles and responsibilities that the energy manager brought to the organization and specific energy conservation measures we implemented through the ARRA EECBG and what our results are. We'll also cover some of the background and logic behind the mechanics of the revolving energy fund, and how that translates into planning for the long-term sustainability fund.

I will also address how to get decision-maker buy-in and what some of the funding challenges were that we had to overcome to bring this plan into action. And ultimately, what we've determined to be the keys to success for the engineering and implementing useful energy savings projects. Oh, see if that gets to work. All right, here we go.

Slide 2: AARA EECBG Project Details

All right. So let's kick this off and we'll look at the specifics behind our AARA EECBG implementation. Now, seed money to fund the rollout of energy conservation measures that will provide the initial fuel for the revolving loan fund and create the energy manager position within the city staff.

You know, my position is directly responsible for the city's comprehensive energy plan. And I'm tasked with determining the best ways, both technical and procedural, to maximizing the effectiveness of our energy consumption.

I'll go into some specific details about this newly created position in greater detail later in the presentation. But the physical rollout of our ECMs, we focused the bulk of our scope of work in

creating the infrastructure for a true Web-based back-net energy management control system tying in all the HVAC and lighting components in 26 of our buildings, and the one front end accessible for a main PC on the city's network.

And where did that just go away. Here we go. All right. I'm talking about the controls.

OK. So our guys can get to it from any computer that's on the city network or through a VPN. Now this control system gives us the ability to monitor and control approximately one-fifth of our occupied air-conditioned municipal facilities, so it was a good out-the-gate project.

And one of the key components of the system is the installation of electric sub-meters on our buildings and chillers, so we can monitor the electrical characteristics of these assets in real-time by having a full sensor suite of important building metrics coming in, temperatures, humidity, CO<sub>2</sub>, occupancy states and amperages of all our motors and compressors in each of these buildings.

We can fine-tune the energy consumption profiles of this equipment and maximize the amount of useful work we're getting out of these assets while limiting the amount of unnecessary wasteful operating conditions. So although site-selected, where we have antiquated HVAC equipment that had exceeded its useful service life, we replaced the systems with life-sized 16-tier or better equipment to take full advantage of the rebate program that was in place at that time from our local utility provider.

We replaced a total of 43 DX split systems and package units. And through our controls, we can monitor the real-time coefficient of performance of each of these systems including the legacy systems that remained in place. And we can display on our equipment graphics real-time tier performance and trended performance degradation, which allows us to fine-tune our maintenance routines.

And on the lighting side of the equation, we performed some LED pilot test on our own fleet and facilities complex as we tried to experiment on ourselves before we subject it to the rest of our city – you know, subject the rest of the city to our energy efficiency initiatives. You know, if we don't like it, we're not going to give it to anybody else.

So based on the positive feedback we received from the pilot test, we rolled out with LED high bay fixtures in our fleet light service garage and some of our fire station engine bays. These LEDs have internal control systems and talk wirelessly between fixtures and communicate to the control system to allow the adjustment of operating schedules, dimming levels, and shows real-time KW demand and consumption records, which allows us to track and monitor the effectiveness of the lighting conditions of those spots so that we can kind of fine-tune them.

All told, the city invested about \$1.76 million in energy efficiency retrofits during the project. Some of that was capital dollars of our own that we have pulled aside for this as well. And so far, we're seeing it, you know, the engineer's record estimated an annual return of \$140,000 in utility costs avoided. So by tracking the individual building performance through the sub-meter

data in utility bills, as you can kind of see on the spreadsheet here, we're building a database that actual energy saving metrics per type of ECM.

So thus far, we've got an average of six months of data from our project sites and we saved \$70,000 off our kilowatt-hour consumption charges in that time, you know, savings of 15 percent off our baseline utility consumption for the year. That translates to an anticipated annual consumption reduction of about 30 percent average across 26 sites. That's pretty decent. It's a good number for an out-of-gate project that is focused mostly on putting the monitoring controls environment in place.

So our experience of this project has shown that by upgrading the control systems at our sites, the chillers feeding the air handling systems, our payback periods are in the neighborhood of two to three years. So for sites like some of our small fire stations, however, results have shown that the payback period isn't very impressive. Actually, it's pretty awful. But you're installing a full-blown control system on small DX equipment at a site that has to run 24/7.

So the added value of doing that comes in being able to remotely troubleshoot that site, and has drastically improved the response capabilities or facilities management service technicians.

So even though the payback isn't there on the maintenance side of things, it has significantly helped our field crews being able to address this equipment. They don't like to load up every possible thing into their van, it could be wrong with that piece of air-conditioning equipment when they head out to the site. They can troubleshoot it remotely and that's very helpful.

### Slide 3: Reasoning behind the Revolving Energy Fund

OK. So some reasoning behind the revolving energy fund, but let's get into some of the nuts and bolts of the fund itself.

And one of the best-selling aspects of the revolving energy fund is that no new capital is necessary to keep the fund in place. In all actuality, the strategic sustainability planning based on asset assessment allows us to offset some of the funds that have been held over in reserve for emergency facility expenditures like when large capital cost, HVAC, or other infrastructure components suddenly fail and required immediate attention.

The strategic sustainability plan allows us to capture information of these assets, and better plan for the replacement using the revolving energy fund as the source of capital for these projects as opposed to an emergency fund. With the seed money already implemented to replace some of the antiquated equipment, we can allocate the payback in the revolving energy fund to address the equipment we see needing replacing on the horizon.

The sense of aspect of the revolving energy fund involves careful planning of the projects that gets funded from this project. As the savings from those projects are captured in the revolving energy fund as well, the goal is to see this fund grow into a useful capital budget for each year.

Let's take a look at the scenario where you see you don't have any seed money but you want to get a revolving energy fund in place. There are a few tactics that can be used to accomplish this. One, check with your local utilities and see what the rebate programs are. Anywhere you are already planning on capital improvements or the placement of your assets, incorporate the rebate amount into your return of investment calculations to determine whether or not an upgrade would result in a favorable ROI.

We typically pulled the trigger on an upgrade that will pay for itself over the baseline quote option mind you within five years or its warranty period, depending upon the scenario. And we set up an account with our local utility where any rebates that we received are not provided to us in the form of a quote, unquote, "credit off our next bill", but the actual dollars redirected to the new account that we can draw from and pay into our revolving loan fund, injecting immediate capital into this fund which allows for smaller project rollouts that would otherwise have to wait until the next fiscal cycle to be funded.

We also looked at sustainable metrics for building projects. And again, if it fiscally makes senses and then there's room in the construction budget or the rolling energy fund can supplement the premium charge for upgrades, we can capture those anticipated savings for the revolving energy fund as well.

So the baseline building models used to determine the utility budget for that building, but the delta between the estimated operating cost for the improved design over the baseline design is transferred to their rolling loan fund account from the utility account.

And then also the easiest way to build your revolving energy fund without the advantage of seed money is in the routine replacement of capital assets that have higher efficiency than the equipment being replaced. The annual savings of these replacements can be calculated using industry standard metrics that the delta between the original operating budget and new operating costs can also be captured into this revolving energy fund.

Slide 4: Decision Maker Buy-in: justifying the cost

So move on, all right, the decision makers. I've talked about how to fund the rolling energy fund but I haven't really gone into the mechanics of the revolving energy itself, so let's just take a look at how this program is actually set up.

You know when a project is proposed with the revolving energy fund, we take a look at the calculated savings and the engineer of record on the project, or if no contracted engineer is involved the industry standard calculation methods described in the appropriate literature, and we use that as the basis of repayment into the loan. The simple size that the accounting structure needed to make the fund work is it provides a concrete number for budgeting purposes, and allows the capturing of those funds without having to wait for the utility billing cycle.

Currently the way it's set up calculated savings repaid back in other revolving energy funds for a defined term of  $N + 1$  years. And that promise the interest component for our financing. For example if the engineer of record on the energy efficiency project calculates a return on the

investment to be seven and a half years, the calculated annual savings would be diverted from the utility budget for that facility in the revolving energy fund for a total of eight years, after which they are free to reduce their utility budget to the post energy conservation measure levels.

This also provides a stable platform to determine energy savings because, as you know, conditions can change in the facility, increased occupancy, and longer occupancy hours and normal weather conditions, they all can contribute to increased facility and G consumption beyond what the original parameters that the engineer use to calculate utility savings.

So we use our sub-meter data and our utility records as measurement and verification to confirm that our savings are on track with what was expected, and modified a predicted savings in future projects based on this data to continuously fine tune the revolving energy fund payments to be as close to reality as possible.

In the instance where the customers, quote, unquote "facility is in fact seeing more savings than the revolving energy fund is drawing, they can use those additionally (freed up) funds at their discretion," so that helps to bring in the occupant behavior aspect of the energy savings as well. And others in the department see the effectiveness program and they want to have their buildings evaluated for revolving energy fund projects, as they see a way to plant two trees with one shovel, reduce their budgets for capital improvement and, yes, eventually utility consumption while being able to divert those funds to more programs specific ventures.

You know, as mentioned before careful planning and revolving energy fund projects is needed to avoid letting the fund run dry. If your seed money – if you have seed money to start your revolving energy fund, target some of the more capital funded (in terms) of retrofit providing you with a longer but not unreasonable payback period, and use your repayment into the revolving energy fund to fund the rapid return on investment projects allowing that fund to grow, letting the (controls) projects pay for themselves quickly by our records.

So let's say, for example, we take the first year as repayment of the revolving energy fund of \$140,000 and throw it at a controls retrofit of the community center where we can expect to see an estimated three-year return on investment based on our record.

The subsequent year of funds being diverted into the revolving energy fund would be the initial \$140,000 grand plus, you know, we're amortizing this over a three year payback, the \$47,000 in savings each year from that spin-off project, so by the second repayment we now have a \$187,000 coming back to us to throw at energy efficiency projects and if planned properly with each of this – you know, when each of these projects finish paying for themselves and those funds are no longer coming back into the revolving energy fund, enough savings from the spin-off projects are feeding into the revolving energy funds where those funds sustain itself.

So how do you avoid having your savings skimmed off from your revolving energy fund for budget reductions? Well the best way is to draft and seek approval on a long-term sustainability plan for your organization that contains realistic long and short-term goals that spell out a fiscally, environmentally and socially responsible direction for your organization but in the end it

not only saves the organization money and resources it provides local jobs and helps to stimulate the local economy.

It includes the structure of the revolving energy fund into this document. If planned properly at some future point the fund should grow to a size at which it maybe appropriate to allow diversion of some of these funds back into the general fund relieving budgetary pressures. And I was going to cover on ESCOs but in the interest of time we're not really going to go into that and that will be covered in the next Webinar anyway, and so, I'm going to go ahead and move forward.

Basically the gist of what I was going to say about ESCOs is that if you have a revolving loan fund in place you're your own ESCO so you don't need an outside resource to do that.

All right, so, you know, one of the keys to, you know, a successful implementation of having a revolving loan fund or your energy conservation measures is to have an energy manager on staff. So let's go ahead and take a look at this.

#### Slide 5: Key to Success: On-staff Energy Manager

Your utility account is (avoided) under primary financial drivers, the justification of having this position in the organization. You know, instituting a revolving energy fund to provide management with a functional budget, you know, it will allow us to reinvest that money and save that energy efficiency retrofit back into more energy efficiency projects and we can watch that rate of investment grow.

Utility rebates can also be funneled into this account as was mentioned in the previous presentation and that injects capital directly into the energy efficiency budget and provides funding for rapid ROI projects that otherwise would have to wait.

So, you know, some of the qualifications that you're going to want in your energy manager you're going to want to look for a mechanical engineer because energy consumption and production and the manner in which it's used in the built environment falls under the discipline of the mechanical engineering.

You're going to want somebody who's got controls experience and construction experience, because all of those things are critical to performing capital intensive infrastructure upgrades in your facilities and it's nice to have that – you know the sustainability can be kind of on your own staff that can bridge that gap between your design professionals and your operating crews and your maintenance professionals, and they can act as an outside consultant from within your own organization, and they can in fact check for you and provide the real world metrics from that mechanical engineering perspectives so you're not putting all of your eggs just in your hired consultant's basket that's out there.

#### Slide 6: Key to Success & Savings drivers: EMS Controls



Let's go ahead and move on. All right so as a kind of an introduction on controls, controls are really important to really get, you know, really get to fine tuning of the energy savings out of your projects. You can't – you can't control what you don't measure. You can't monitor – I mean, you can't do what you need to do unless you have all of the information in front of you in order to be able to make the correct decisions and ensure that everything is operating as it should.

And so, as we say we invest in the bulk of our energy efficiency retrofit money on installing a control system that allows us to troubleshoot a remote equipment, you know, to try and to report any important metrics that we feel are important and it's also – you know, if you get a control system that has an energy reporting feature built right into it thus absorbing the information out of your sub-meters you have back-up information to be able to review your utility bills coming in, and see if there's any discrepancies there and if you provide a guest level password to your decision makers in the organization.

They can come in and they can take a look at the energy reports being sent out of your software and that provides instant real time transparency on the day-to-day operational costs of your organization, and that is a huge eye-opener for your decision makers when they actually physically see what the power bills were before and what they are after you've rolled through with these implementations. They will definitely get on board when they see what those savings are and how quickly they pay for themselves.

#### Slide 7: Keys to Success: Beyond ROI's and Life Cycle Cost Analysis

I'm not going to (harp) a bunch of time on lighting because lighting is one of those things that it's low-hanging fruit but it doesn't make sense to go for the (safety) LEDs when you've got a bunch of lights out there running that don't need to be running in the first place. So, you know, I would say focus on installing occupancy centers and getting your lighting under control first before you make the capital expenditures on higher-efficiency LED fixtures.

And then when you go to do LEDs and sell them on any of the lighting fixtures that have a 24-hour run time or any of the very-difficult-to-access-and-maintain lighting fixture, go ahead and swap those out with LEDs because that makes sense from a maintenance perspective, and your paybacks will be there.

And, also, when you go to do an LED project, get an IES file on what the lighting footprint is with your existing lighting in place and what it's going to look like afterwards. An IES file – Illuminating Engineering Society file – it's an industry standard metric that shows you your (footcandle) density, which is a measure of light in your particular project area, and you want to make sure that the LEDs that you're going to put in there are going to be able to provide you with the level of light that you're looking for at your site.

#### Slide 8: Savings drivers continued: HVAC

Let me go ahead and move on. OK, so moving on to air-conditioning. Down here, in Orlando, air-conditioning gets the lion's share of our power bill. So, I mentioned before, you want to factor in your rebates structure and replacing you HVAC equipment.

So, in our case, with our local utilities rebate, it now allows us to purchase up to 18 SEER equipment that will pay for itself in less than it's warranty period versus the minimum code of 13 SEER which we'd have to purchase at the minimum anyway. So for our EECBG project, like I said, we changed out 43 units, all the (heat) pumps, and that maximized our rebate at that time.

So, under the rebate structure that was in place, the 16 SEER split systems that were between two and a half and five tons, they repaid their additional up-front cost in an average of 3.2 years. That's less than a warranty period. That's a no-brainer. We pulled the trigger on it.

#### Slide 9: Concluding Slide

So, let's see, all right. And one last thing that I'd really like for you guys to check out is you can find our official municipal sustainability plan. That's now online and published. And you can find it at the [cityoforlando.net/greenworks](http://cityoforlando.net/greenworks) or you can follow that link that's up there on the screen. And if you've got any questions, please feel free to contact me.

You can reach me at the e-mail address that's listed right there. And I would be more than happy to go into further detail on how any of this is laid out and structured. So thank you for your time. And, sorry, I hurried my way through this.

Neelam Patel: Well, thank you, Nate. That was great.

So what we're going to do now is switch to a question about challenges.

So, Lauren, if you can pull that up for us, that would be great.



## Poll Question #5

Neelam Patel: And this question, we'll talk about some of the savings you can attain from public buildings. And this will help introduce Pat putting together a presentation. So please take a moment to answer this question.

Have you realized the potential of energy savings from your public buildings? And, oh, excuse that typo there.

So, Lauren, if you could please show the results?

So most of you have realized some savings, but have opportunities for more. Great. So, hopefully, these presentations today will help generate ideas for you to take further action. And, with that, I'd like to turn it over to Pat, who is going to talk about how you can bring together some of the pieces of the presentations you've heard today – so, for example, using Philadelphia's approach and combining it with something that the City of Orlando has done.

So, Pat?

## Putting it Together: Philadelphia School District + City of Orlando = Ideas for your own Funding Strategy

Slide 1: Title Slide

Pat McGuckin: Thank you, Neelam.

We just heard two great presentations. The last one from the City of Orlando talked about growing a revolving loan fund. Now, they seeded that fund with an EECBG grant from the federal government. Those grants are either no longer available or available in much reduced quantities. And so the question becomes, well, great, but how can – how can I do the same thing? Let's talk about that.

Slide 2: Putting It Together

What you heard from the Philadelphia program focusing on behavioral and operational changes that involve little or no cost can be a great way to lead to a more comprehensive program like Orlando's. The (corporational) behavior on operational savings can be a great way to create a revolving loan fund.

A couple of steps there that can be useful – benchmarking can help you prioritize your efforts if you're going to do an energy efficiency program. It can identify which buildings are using the most energy and the most inefficiently. And it can also help to identify utility billing errors because benchmarking keeps track of what your utilities bill have been and can identify billings where the bills seem to be out of whack.

The demand response payments and other incentives can augment the energy savings. You heard about that. Purchasing energy on the open market, making use of low cost resources like (internal) and nonprofit help – Philadelphia has used that as a way to hold down costs as well.

One of the key there is that policymakers have to be persuaded to recycle the savings into the revolving loan fund to pay for upgrades, more upgrades, and even bigger savings. It's not usually a problem to get a policy installed to have the energy savings used to pay off the fund. But, as we talked earlier, if you want to grow the fund, then at least some of the excess energy savings beyond what's required to pay off the loan need to go into the fund as well to help grow it, so that you can do even more projects and save even more money.

Slide 3: Putting It Together (continued)

And then we talked also about the one potential drawback of this. And, that is, that policy decisions can be subject to changes and those funds can be rated. With those energy savings, from a program like Philadelphia's, you can use that to grow a revolving loan fund into more and bigger projects. The rebates and incentives can be recycled into the revolving loan fund. You get ancillary benefits like reduced maintenance that can help sell the program.

Starting small, as Nate talked about, can be an effective way, and internal funding can be more cost-effective than using escrow financing.

With that, I'll mention that there's a – the next Webcast in the series is addressing the financing options that we pointed out – PACE, HUD PowerSaver, on-bill financing and so forth. And that's coming up in two weeks, same time. And you can register at the link there. With that, I'll turn it back over to Neelam.

## Questions and Answers

Neelam Patel: Great. Thank you.

We're going to begin our question-and-answer session. So all the questions you've submitted throughout the Webcast, we will ask the presenters. Please stay on the line to hear the answers to these questions. And if you come up with new questions, feel free to continue to submit those through the Q&A.

And as we come close to the end our Webcast, I do want to remind everyone to take just a few minutes to fill out the exit survey questions. Again, the information we'll collect are important to us. So, with that, Lauren will start us off with asking our first question to the panelist.

Lauren Pederson: Great. Thank, Neelam. Here's a question for Pat about participation fees and getting clarification on that. Are participation fees the same as user fees, like water fees? What exactly are they?

Pat McGuckin: They can be user fees certainly, water fees. The City Babylon, New York, has a waste fee that's used to help support their energy efficiency programs. And they're not alone. There are lots of communities that have done similar things.

But they can also be fees for specific program participation. For example, the City of Cincinnati has a commercial building retrofit program, the Greater Cincinnati Energy Alliance. And in order to participate in the program, there is a fee that is charged at the outset to help cover the cost of performing an audit and – and they've talked about doing loan origination fees and that sort of thing.

There are issues with charging fees if you're using (RR) money. So that's something that you'd want – if you're using (RR) money, you'll want to talk with your project officer about whether or not fees are an option. But if your source of funding is coming from – from other places than fees for participation like for – like charging for a home energy audit, it can be a valuable way to help support your program.

Lauren Pederson: Great. Thanks, Pat. And then one more question for you. One of your slides mentioned tax incentives for public buildings. What tax incentives are available? The participant was under the impression that public buildings don't have to pay taxes.

Pat McGuckin: They don't. And that's a great question. It's a little known fact. Part of 179D Tax Deduction Legislation creates the ability for the municipality to pass the tax deduction along to the designer of the project.

So, let's say that you've got a project – you want to design a high-energy efficiency building or make improvements, high-energy efficiency improvements – when you put that out to bid, you can ask that the designers include in the bid the fact that they're going to be getting the tax

deduction passed through by the municipality and, as a result, you'll get lower bids. It's kind of a reverse way. It's not so much that it's a tax deduction for you, but it's a way that, if you use it effectively, can be used to lower your design costs for making the improvements.

I'd encourage you to go to that link. If you don't have it in front of you, you can just Google the 179D Tax Deduction and find all sorts of information about it.

Lauren Pederson: Perfect. Thank you.

The next question is for Marvin Lee from Philadelphia. How did you reduce the demand from Fels High School? Did you increase temperature set points or something else?

Marvin Lee: Am I on?

Lauren Pederson: Yes.

Marvin Lee: Hello? Oh, OK. Basically, the Fels High School reduced the demand by setting down the chillers, motors. And the lighting has very little effect to it, but you have to control the chillers and the motors.

Lauren Pederson: OK, thank you. And then, Marvin, this question is for you as well. In addition to conferences and seminars, what are the best ways to find companies who help you get into the market pricing arrangements? And, also, how do you find companies who do utility billing audits?

Marvin Lee: The suppliers, I think that the best way to reach out, the best way to get into the market is talk to your suppliers. And your local utility company usually have the approved supplier list in your – in the Web site. And they're like the usual suspects, like, usually big companies the (constellations, excellence). I mean, they usually serve your market. So you can start from there, too. And what was the other question?

Lauren Pederson: And then the last part of that was how do you find companies who do utility billing audits?

Marvin Lee: Basically, we found – I think you can put – figure out – put an RFP out on the street. That's the one way to do it. And I think, if you (go with it), there are so many companies out there.

Lauren Pederson: Thank you. And one last question for you. Did you consider the greenhouse gas effects of purchasing alternative energy?

Marvin Lee: We were really focusing on the bottom number – bottom line numbers, so we didn't really focus on the green gas and those green things. What we were focusing are the hard dollars. So we didn't really consider that as any – we didn't give any consideration to those green – green gases and stuff. No.

Lauren Pederson: OK. Thank you.

Marvin Lee: All right.

Lauren Pederson: And then moving on to Nate we have a few questions. How did you calculate savings when rates are changing frequently?

Nate Boyd: Well, the savings that we calculated for the fact of the revolving energy fund, we calculated based off of what today's dollars are, what we're paying in kilowatt hours right now. And the City of Orlando is kind of in a unique scenario where we have a partnership with the municipal – a municipal utility provider. So, although they are a public utility, they're only really owned by one entity, the municipal government of the City of Orlando.

Now, we're still a customer of them. So we still have to pay them. So, although, technically, we own them, they act like they own us, as any utility does. Now – yes, the calculation of our payment – of our paybacks is just based off of what the current utility structure is right now. Now, we did go back and we looked at the historical rate and rise of what the utility – utilities costs were for as to determine whether or not we should – we should have that as an, you know, as applicable in our calculation.

But kind of at the same time that we were doing that, the local utility also just cut the fuel rate charge of everybody's bill under their charge by 13 percent after installing a 5 megawatt solar plant at their local power plant. So, there's imbalance in there. The utility rate goes up and down here. So we kind of just left it right where it was to keep the numbers simple for the accounting side of it.

Lauren Pederson: OK. Thanks. And then for your next question, did you encounter any obstacles or challenges within the city in setting off the revolving loan fund? And how did overcome those?

Nate Boyd: No. Not really, because the leadership in the City of Orlando is pretty progressive. And, you know, we call ourselves the "city beautiful" for a reason. We've got a very lush greenscape here in the city. And we do – we do a generally a good job by trying to be stewards of the local environment.

So, it's kind of a, you know, once we – once we came to the conclusion that, yes, the city does need to have a municipal sustainability plan, a component to that plan being a revolving energy fund kind of – it takes a lot of the heat and the pressure off of having to fight that battle every single time you go to try to budget for something and want to apply it to revolving energy fund, if it's in a document that city council and the mayor have already signed off on and approved because they wanted to see something like this implemented.

You know, the city looks at – what are our finances going to look like long-term, not just year-to-year. And that's, you know, the fundamental basis behind our sustainability plan.

Lauren Pederson: Great. Thank you. And if you could provide information on the software program you use to provide data to all employees for your project.

Nate Boyd: OK. I don't, you know, I'm used to doing, you know, talks and stuff like that where you get gigged on commercialization, so I intentionally leave the names of programs and stuff out.

But if anybody does want to know, I mean, it's public record. We are a municipal government. The control system that we're using is Automated Logics Web Control and it has energy reports built in to it as a feature of that.

So we use the same Web log-on that any of our service guys would use to get into our control system. It's just a Web page that's being broadcast from a server that we have on our own city network, but on that log-in page is link to specifically take them to the energy report section of it. And the administrator of your control system, your energy manager, whoever it may be, they can set up the user profiles of whoever wants to look in. Like, for example, I've got one that's just called Orlando City Hall.

And anybody at the city hall can just log in with that as a guest password and it takes them right to the energy reporting section of it and it shows them exactly what the energy consumption is on a day-to-day or month-to-month basis. And it breaks it down into different kind of metrics, kilowatt hours per square foot, kilowatt hour per square foot per person, which is very useful when you're comparing the performance of fire stations one to another and so on and so forth.

So they've got all of that information real time accessible right there. And they can see what the sub-meter information that's coming in on a little trend display, it's right there. So that they can instantaneously go in and look and see exactly how these buildings are performing and they can, you know, send me over an e-mail or call me up and say, "Why was there a 20 kilowatt spike at 3 o'clock over at this particular fire station" or whatever.

And I can go back to the system and say, "Oh, well, they charged up their fresh-breathing oxygen tanks there. And that particular piece of equipment pulls down 20 kW when they do it or whatever. You know, it provides the instant set of information that they're going to want when they want it because decision makers don't like to wait.

When they ask for something, they want it now. And if you got it real time accessible forum, they've got it whenever they want.

Lauren Pederson: Great. Thank you, Nate.

And I'd like to thank all the participants in the audience. Hopefully, you found the overview of funding options and strategies presented by both Marvin Lee from the Philadelphia School District and Nate Boyd from the City of Orlando helpful.

For any questions that we were not able to answer, we will get written answers and post to our Web site and also send a follow up e-mail to all the registered participants for today's Webcast.

One last – two last plugs, our next Webcast, which is on financing options for clean energy, energy efficiency and renewable energy programs, will be June 13. So if you haven't already registered, please do so.

And again, as you leave the Webcast today, please take time to fill out the exit survey questions. On behalf of the U.S. Environmental Protection Agency's Local Climate and Energy Program, I want to thank you for joining us today. And we look forward to having you on our next call. Take care.

Operator: This concludes today's conference call. You may now disconnect.

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